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CORRESPONDENCE

Closed head injury resulting in paradoxical improvement of a seizure disorder

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Dear Sir,

We read with interest the accurate case report of Spitz and co-workers[1] of a patient with closed head injury resulting in paradoxical improvement of a seizure disorder recently published in *Seizure*. The authors described an illustrative case report of a patient with intractable complex partial seizures who sustained a closed head injury as a result of a seizure. This accidental trauma resulted in a 1-year remission of the patient's seizures. The authors held that there was a causal relationship between the head trauma and the improvement in seizure frequency in their patient. They postulated a mechanism mimicking ablative surgery relevant for this phenomenon. The authors quoted another case of 'paradoxical' seizure improvement from the literature[2].

However, they did not refer to the systematic study of the effects of brain lesions on the course of chronic epilepsies performed at the Epilepsy Unit of the University Hospital Innsbruck, Austria[3]. In this study we analysed the influence of brain injury by trauma, stroke or intracerebral haemorrhage, documented by CT scan, on the course of chronic idiopathic, cryptogenic as well as symptomatic epilepsies. We retrospectively studied 63 patients (40 male, mean age 44.8 years, SD 14.7; 23 female, mean age 43.1 years, SD 16.4). Seizure characteristics, EEG recordings as well as seizure frequencies before and after the brain insult were compared. The eventually established changes in seizure frequency in this group were compared to a control group matched for age, sex and epileptic syndrome, but not for seizure frequency, to rule out a spontaneous change in seizure frequency, which is a well observed yet unexplained phenomenon in the course of chronic or even intractable epilepsies. Patients and controls were observed for a mean time of 22.1 years (SD 7.3) and 22 years (SD 11.3 a), respectively. Seizure type remained unchanged in 97% with respect to the time before and after the brain insult. Whereas seizure frequency decreased in 51%, of whom 37.5% were seizure free, 46% experienced no change in seizure frequency and only 3% of patients showed an increase after brain injury. The reduction in seizure frequency was statistically significant (McNamar test, $df = 1$; $P < 0.005$). The decrease of seizure frequency in our patients was not attributable to improved compliance with treatment since we controlled for this variable. Like Spitz and co-workers[1] we feel that there may be an nonspecific effect, mimicking ablative surgery, which is much more common than previously believed and already well described. However, the mechanism of this paradoxical effect seems unclear and deserves further evaluation.

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Editors Note:
The most impressive example of head injury alleviating epilepsy in my experience was a patient with chronic complex partial seizures who was operated on for a standard amygdalo-hippocampectomy. The surgeon had got as far as removing the appropriate part of the skull when he realised that he was operating on the wrong side. The cranium was replaced, the wound closed and apologies made. The patient remained seizure free for over a year. Did medieval trephining for epilepsy achieve similar results?

Tim Betts